#### PATENT COOPERATION TREATY

FEB 2 U 2007

SCIENTIFIC-ATLANTA, INC. LEGAL DEPARTMENT

#### From the INTERNATIONAL SEARCHING AUTHORITY

To:

NOTIFICATION OF TRANSMITTAL OF

SCIENTIFIC-ATLANTA, INC. Attn. Lafferty, Brook W. Intellectual Property Department 5030 Sugarloaf Parkway Lawrenceville, GA 30044 ETATS-UNIS D'AMERIQUE	THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION
	(PCT Rule 44.1)
	Date of mailing (day/month/year) 09/02/2007
Applicant's or agent's file reference	TOD FURTHER ACTION Con acceptable 4 and 4 holow
F-10410-PC	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US2006/033965	International filing date (day/month/year) 31/08/2006
Applicant	
SCIENTIFIC-ATLANTA, INC.	
The applicant is hereby notified that the international searc Authority have been established and are transmitted herew Filing of amendments and statement under Article 19: The applicant is entitled, if he so wishes, to amend the claim When? The time limit for filing such amendments is no International Search Report.	ms of the International Application (see Rule 46):
Where? Directly to the International Bureau of WIPO, 3 1211 Geneva 20, Switzerland, Fascimile No.: (	4 chemin des Colombettes 41–22) 338.82.70
For more detailed instructions, see the notes on the a	·
2. The applicant is hereby notified that no international searc Article 17(2)(a) to that effect and the written opinion of the	h report will be established and that the declaration under International Searching Authority are transmitted herewith.
3. With regard to the protest against payment of (an) addition	ional fee(s) under Rule 40.2, the applicant is notified that:
applicant's request to forward the texts of both the pr	en transmitted to the International Bureau together with the otest and the decision thereon to the designated Offices. oplicant will be notified as soon as a decision is made.
4. Reminders  Shortly after the expiration of 18 months from the priority date, International Bureau. If the applicant wishes to avoid or postpon application, or of the priority claim, must reach the International before the completion of the technical preparations for internation.	e publication, a notice of withdrawal of the international Bureau as provided in Rules 90 <i>bis.</i> 1 and 90 <i>bis.</i> 3, respectively, onal publication.
The applicant may submit comments on an informal basis on the international Bureau. The International Bureau will send a copy international preliminary examination report has been or is to be the public but not before the expiration of 30 months from the pr	of such comments to all designated Offices unless an established. These comments would also be made available to
Within 19 months from the priority date, but only in respect of se examination must be filed if the applicant wishes to postpone the date (in some Offices even later); otherwise, the applicant must, acts for entry into the national phase before those designated O	e entry into the national phase until 30 months from the priority within 20 months from the priority date, perform the prescribed
In respect of other designated Offices, the time limit of <b>30 month</b> months.	hs (or later) will apply even if no demand is filed within 19
See the Annex to Form PCT/IB/301 and, for details about the ar Guide, Volume II, National Chapters and the WIPO Internet site	

Name and mailing address of the International Searching Authority



European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016

Authorized officer

Chantal Flohr



#### PATENT COOPERATION TREATY

### **PCT**

### INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	FOR FURTHER ACTION	as well	see Form PCT/ISA/220 Il as, where applicable, item 5 below.		
F-10410-PC International application No.	International filing date (day/month/year)		(Earliest) Priority Date (day/month/year)		
PCT/US2006/033965	31/08/2006		07/09/2005		
Applicant					
SCIENTIFIC-ATLANTA, INC.					
This international search report has been according to Article 18. A copy is being tr	prepared by this International Searc ansmitted to the International Burea	ching Autho	ority and is transmitted to the applicant		
This international search report consists	of a total of she	ets.			
X It is also accompanied by	y a copy of each prior art document of	ited in this	report.		
Basis of the report					
a. With regard to the language, the					
a translation of the	application in the language in which ne international application into		, which is the language		
of a translation for	urnished for the purposes of internati	onal searc	th (Rules 12.3(a) and 23.1(b))		
b. With regard to any nucle	otide and/or amino acid sequence	disclosed	i in the international application, see Box No. I.		
2. Certain claims were for	und unsearchable (See Box No. II)				
3. Unity of invention is la	cking (see Box No III)				
4. With regard to the <b>title</b> ,					
-	ubmitted by the applicant				
the text has been establi	shed by this Authority to read as followed	ows:			
5. With regard to the abstract,					
1	submitted by the applicant		n de la constant		
the text has been estable may, within one month fi	ished, according to Rule 38.2(b), by rom the date of mailing of this interna	this Author ational sea	rity as it appears in Box No. IV. The applicant rch report, submit comments to this Authority		
6. With regard to the drawings,					
a. the figure of the <b>drawings</b> to be	published with the abstract is Figure	No3			
X as suggested by	• •	- د ند ماند	and a figure		
<u>  </u>	his Authority, because the applicant				
	his Authority, because this figure bet be published with the abstract	w Graiati	ICHECO GIO HIVONION		
o, land not the rightes is to	on hanging with the analiant				

#### INTE IATIONAL SEARCH REPORT

ernational application No PCT/US2006/033965

A. CLASSIFICATION OF SUBJECT MATTER INV. H04N7/173

According to International Patent Classification (IPC) or to both national classification and IPC

#### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

HO4N HO4L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUM	ENTS CONSIDERED TO BE RELEVANT	······································
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Х	WO 02/097584 A (HYPERSPACE COMMUNICATIONS INC [US]) 5 December 2002 (2002-12-05)	1-16
Y	paragraphs [0019] - [0022], [0030] - [0033]	20
A	WO 01/77888 A2 (KONINKL PHILIPS ELECTRONICS NV [NL]) 18 October 2001 (2001-10-18) the whole document	1-16
A	WO 2004/100500 A2 (THOMSON LICENSING SA [FR]; GRIMES KEVIN LLOYD [US]; BURNETT	1-16
Y	ANGELA REN) 18 November 2004 (2004-11-18) the whole document	21
Α	US 2003/174243 A1 (ARBEITER JAMES HENRY [US] ET AL) 18 September 2003 (2003-09-18) the whole document	1-16
	-/	

X Further documents are listed in the continuation of Box C.	X See patent family annex.
* Special categories of cited documents:  "A" document defining the general state of the art which is not considered to be of particular relevance  "E" earlier document but published on or after the international filling date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filling date but later than the priority date claimed	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone  *Y* document of particular relevance; the claimed invention cannot be considered to involve an invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  *&* document member of the same patent family
Date of the actual completion of the international search	Date of mailing of the international search report
1 February 2007	09/02/2007
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tet. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax; (+31-70) 340-3016	Authorized officer Bertrand, Frédéric

5

#### INTE IATIONAL SEARCH REPORT

rnational application No PCT/US2006/033965

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2005/160468 A1 (RODRIGUEZ ARTURO A [US] ET AL) 21 July 2005 (2005-07-21) cited in the application the whole document	1-16
A	US 2004/133907 A1 (RODRIGUEZ ARTURO A [US] ET AL) 8 July 2004 (2004-07-08) cited in the application the whole document	1-16
X Y	US 6 259 733 B1 (KAYE JAMES E [US] ET AL) 10 July 2001 (2001-07-10) column 7, lines 54-66	17-19, 28-30 20,21
X	WO 2004/091219 A (KONINKL PHILIPS ELECTRONICS NV [NL]; WOOD KARL J [GB]; OWLETT TIMOTHY)	22,23
A	21 October 2004 (2004-10-21) page 4, line 6 the whole document	24-27
X	US 2003/219228 A1 (THIAGARAJAN BALAJI [US] ET AL) 27 November 2003 (2003-11-27) figure 5	22,23
Α	US 2003/221194 A1 (THIAGARAJAN BALAJI [US] ET AL) 27 November 2003 (2003-11-27) the whole document	22-32
Α	US 5 721 829 A (DUNN MATTHEW W [US] ET AL) 24 February 1998 (1998-02-24) the whole document	22-27
X	EP 1 069 801 A1 (IBM [US]) 17 January 2001 (2001-01-17) the whole document	33-44
A	US 2003/074214 A1 (KELLIHER TIMOTHY L [US]) 17 April 2003 (2003-04-17) the whole document	33-44

5

International application No. PCT/US2006/033965

#### INTERNATIONAL SEARCH REPORT

Box II	Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)
This Inte	ernational Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
1.	Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
2.	Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3.	Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box III	Observations where unity of invention is lacking (Continuation of item 3 of first sheet)
This Int	ernational Searching Authority found multiple inventions in this international application, as follows:
	see additional sheet
1. X	As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.	As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.	As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4.	No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
Rema	The additional search fees were accompanied by the applicant's protest.  No protest accompanied the payment of additional search fees.

#### FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-16

optimizing bandiwdth utilization to a television subscriber premises, depending on the subscriber terminal capabilities, especially the display

2. claims: 17-32

optimizing bandwidth utilization to a television subscriber premises, depending on the program content type or theme (e.g. sports, cartoon)

3. claims: 33-44

optimizing bandwidth utilization to a television subscriber premises, by selecting and assessing the different communication paths available

#### INTE IATIONAL SEARCH REPORT

Information on patent family members

ernational application No PCT/US2006/033965

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
WO 02097584	A	05-12-2002	NONE	-		
WO 0177888	A2	18-10-2001	AT JP US	338307 2003533712 2001039572	T	15-09-2006 11-11-2003 08-11-2001
WO 2004100500	A2	18-11-2004	BR CN EP JP KR	P10410034 1784859 1620975 2006525771 20060038924	A A2 T	25-04-2006 07-06-2006 01-02-2006 09-11-2006 04-05-2006
US 2003174243	A1	18-09-2003	NON			
US 2005160468	A1	21-07-2005	CA WO	2554208 2005071658		04-08-2005 04-08-2005
US 2004133907	A1	08-07-2004	US US	6986156 2005071882		10-01-2006 31-03-2005
US 6259733	B1	10-07-2001	US	2001014121	A1	16-08-2001
WO 2004091219	Α	21-10-2004	NON	E		
US 2003219228	A1	27-11-2003	NON	E		
US 2003221194	A1	27-11-2003	NON			
US 5721829	A	24-02-1998	NON			
EP 1069801	A1	17-01-2001	DE DE US	69920893 69920893 6765873	T2	11-11-2004 09-03-2006 20-07-2004
US 2003074214	A1	17-04-2003	US	2003074480	A1.	17-04-2003

#### PATENT COOPERATION TH\_ATY

From the INTERNATIONAL SEARCHING AUTHORITY To: WRITTEN OPINION OF THE see form PCT/ISA/220 INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1) Date of mailing (day/month/year) see form PCT/ISA/210 (second sheet) Applicant's or agent's file reference FOR FURTHER ACTION See paragraph 2 below see form PCT/ISA/220 Priority date (day/month/year) International filing date (day/month/year) International application No. 31.08.2006 07.09.2005 PCT/US2006/033965 International Patent Classification (IPC) or both national classification and IPC INV. H04N7/173 Applicant SCIENTIFIC-ATLANTA, INC. This opinion contains indications relating to the following items: 1. Box No. I Basis of the opinion ☐ Box No. II Priority Non-establishment of opinion with regard to novelty, inventive step and industrial applicability Box No. III Box No. IV Lack of unity of invention Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial Box No. V applicability; citations and explanations supporting such statement Certain documents cited ☐ Box No. VI Certain defects in the international application Box No. VII ☐ Box No. VIII Certain observations on the international application **FURTHER ACTION** 2. If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notifed the International Bureau under Rule 66.1 bis(b) that written opinions of this International Searching Authority will not be so considered. If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later. For further options, see Form PCT/ISA/220. 3. For further details, see notes to Form PCT/ISA/220. Date of completion of Authorized Officer Name and mailing address of the ISA: this opinion European Patent Office - Gitschiner Str. 103 see form Bertrand, Frédéric

PCT/ISA/210

Telephone No. +49 30 25901-406

D-10958 Berlin

Tel. +49 30 25901 - 0

Fax: +49 30 25901 - 840

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/US2006/033965

	Вох	No	. I Basis of the opinion
1.	With	re	gard to the language, this opinion has been established on the basis of:
		the	international application in the language in which it was filed
		a tı pui	anslation of the international application into , which is the language of a translation furnished for the poses of international search (Rules 12.3(a) and 23.1 (b)).
2.	With	re ess	gard to any <b>nucleotide and/or amino acid sequence</b> disclosed in the international application and ary to the claimed invention, this opinion has been established on the basis of:
	a. ty	pe	of material:
		]	a sequence listing
		]	table(s) related to the sequence listing
	b. fo	rm	at of material:
		]	on paper
	E		in electronic form
	c. tir	me	of filing/furnishing:
	Ε		contained in the international application as filed.
		]	filed together with the international application in electronic form.
	[		furnished subsequently to this Authority for the purposes of search.
3	. 🗆	ha cc	addition, in the case that more than one version or copy of a sequence listing and/or table relating theretons been filed or furnished, the required statements that the information in the subsequent or additional upplies is identical to that in the application as filed or does not go beyond the application as filed, as oppropriate, were furnished.

4. Additional comments:

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/US2006/033965

	Box	No. IV	Lack of unity of in	vention						
1.	⊠	In resp	onse to the invitation ( ble time limit:	Form PC	CT/ISA/206	) to pay ad	ditional fees, the	applicant ha	as, within the	
		$\boxtimes$	paid additional fees							
			paid additional fees u	nder pro	itest and, v	vhere appli	cable, the protes	st fee		
			paid additional fees u	ınder pro	test but th	e applicabl	e protest fee wa	s not paid		
			not paid additional fe	es						
2.		This Au	uthority found that the olicant to pay addition	requiren al fees.	nent of unit	ty of invent	ion is not compli	ed with and	chose not to invite	
3.	Thi	s Author	rity considers that the	requirem	ent of unit	y of inventi	on in accordanc	e with Rule 1	13.1, 13.2 and 13.3	is
	П	complie	et with							
		•		vina raa	oone:					
	K)		plied with for the follow	wing reas	50115.					
			parate sheet					60	Paradamaka akama	
4.	Co	nsequer	itly, this report has be	en estab	lished in re	espect of th	e following parts	or the interr	тапопат аррисацоп.	
		all parts								
		the part	s relating to claims No	s.						
	Bo	x No. V lustrial	Reasoned statem applicability; citation	ent undens and e	er Rule 43 explanation	<i>bis</i> .1(a)(i) ns suppor	with regard to the ting such state	novelty, inve ment	entive step or	
1.	Sta	atement								
	No	velty (N	)	Yes: No:	Claims Claims	1-44				
	Inv	entive s	tep (IS)	Yes: No:	Claims Claims	1-44				
	Inc	lustrial a	applicability (IA)	Yes: No:	Claims Claims	1-44				
2	. Cìt	ations a	nd explanations							

see separate sheet

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (SEPARATE SHEET)

PCT/US2006/033965

This Authority considers that there are 3 inventions covered by the claims indicated as follows:

- I: Claims 1 to 16 directed to optimizing bandwidth utilization to a television subscriber premises, depending on the subscriber terminal capabilities, especially the display
- II: Claims 17 to 32 directed to optimizing bandwidth utilization to a television subscriber premises, depending on the program content type or theme (e.g. sports, cartoon)
- III: Claims 33 to 44 directed to optimizing bandwidth utilization to a television subscriber premises, by selecting and assessing the different communication paths available

The reasons for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, are as follows:

The prior art has been identified as general knowledge and discloses: general purpose of optimizing scare resources, in this case bandwidth.

**Subject 1**: It follows that the following technical feature of claims 1 to 16 make a contribution over the prior art and can be considered as a special technical feature within the meaning of Rule 13.2 PCT:

- ascertaining display attributes

The problem solved by this special technical feature can therefore be construed as: optimize bandwidth depending on terminal capabilities

**Subject 2**: It follows that the following technical feature of claims 17 to 32 make a contribution over the prior art and can be considered as a special technical feature within the meaning of Rule 13.2 PCT:

- ascertaining content type

The problem solved by this special technical feature can therefore be construed as: optimize bandwidth depending on content

**Subject 3**: It follows that the following technical feature of claims 33 to 44 make a contribution over the prior art and can be considered as a special technical feature within the meaning of Rule 13.2 PCT:

- tracking bandwidth utilization on multiple links

#### International application No.

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (SEPARATE SHEET)

PCT/US2006/033965

The problem solved by this special technical feature can therefore be construed as: optimize bandwidth in a system with multiple links

Also, examining the possible correspondence by technical effect, one finds that

- Subject 1: the technical effect of the first invention is to adapt the bandwidth to the display type,
- Subject 2: that the technical effect of the second invention is to adapt the bandwidth to the content type
- **Subject 3**: and that the technical effect of the third invention is to find the most appropriate path for transport

This appears to show lack of corresponding technical effect as well. Consequently, neither the objective problem underlying the subjects of the claimed inventions, nor their solutions defined by the special technical features allow for a relationship to be established between the said inventions, which involves a single general inventive concept.

In conclusion, the groups of claims are not linked by common or corresponding special technical features and define **3 different inventions** not linked by a single general inventive concept.

The application, hence does not meet the requirements of unity of invention as defined in Rules 13.1 and 13.2 PCT.

PCT/US2006/033965

#### Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

A. WRITTEN OPINION FOR THE FIRST INVENTION CLAIMS 1-16

A.2. Dependent claims 2 to 16 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see document D1 and the corresponding passages cited in the search report.

#### B. WRITTEN OPINION FOR THE SECOND INVENTION CLAIMS 17-32

Reference is made to the following document:

- D1: WO 02/097584 A (HYPERSPACE COMMUNICATIONS INC [US]) (2002-12-05)
- D3: WO 2004/100500 A2 (THOMSON LICENSING SA [FR]; GRIMES KEVIN LLOYD [US]; BURNETT ANGELA REN) 18 November 2004 (2004-11-18)
- D7: US 6,259,733 B1 (2001-07-10)
- D8: WO 2004/091219 A (2004-10-21)

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (SEPARATE SHEET)

International application No.

PCT/US2006/033965

----- [lack of novelty] -----

B.1.1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claim 17** is not new in the sense of Article 33(2) PCT.

The document D7 discloses: adapting bandwidth (variable bit rate encoding and statistical multiplexing, abstract) based upon content type (depending on source parameters like spatial activity, abstract). A football match program would for instance naturally have more spatial activity than weather report program, which can be traced either automatically or manually. The scope of claim 17 is broad enough to embrace the disclosure of D7 and is therefore not new.

- B.1.2. The same applies to the subject matter of claim 28.
- B.1.3. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claim 22** is not new in the sense of Article 33(2) PCT.

The document D8 discloses a method for optimizing data rates, which, when a signal, being recorded and watched, is stopped being watched (in the case of D8 because of signal corruption), completes the recording by non real time download (replacement portions via second communication channel, abstract; non real time, page 4 line 6). The scope of claim 22 is broad enough to embrace the disclosure of D8 and is therefore not new.

- ----- [dependent claims, negative assessment] ------
- B.2.1. Dependent claims 18 to 19 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty, because they are also disclosed in D7 (see passages cited in the search report).
- B.2.2. The subject matter of **claim 20** is a mere juxtaposition of claim 17 an claim 1, without a surprising effect, and is therefore not inventive (see disclosure of D1 and D7).
- B.2.3. The same applies to the subject matter of claim 21 with juxtaposition of D7 and D3.
- B.2.4. Dependent claims 29 to 32 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of

# WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (SEPARATE SHEET)

International application No.

PCT/US2006/033965

novelty and/or inventive step, see document D8 and the corresponding passages cited in the search report.

F.Bertrand